CORONERS ACT, 2003

SOUTH  *AUSTRALIA*

FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 14th, 15th, 16th, 19th, 20th and 21s days of June 2006, 31st day of August 2006, the 1st day of September 2006 and the 25th day of September 2006, by the Coroner's Court of the said State, constituted of Mark Frederick Johns, State Coroner, into the death of Elly Sarahnia McCarthy.

The said Court finds that Elly Sarahnia McCarthy aged 13 years, late of 11 Humphrys Road, Aldinga died at the Women's and Children's Hospital, 72 King William Road, North Adelaide, South Australia on the 7th day of February 2004 as a result of cerebral oedema and infarction secondary to extensive subdural empyema. The said Court finds that the circumstances of her death were as follows:

1. Introduction

1.1. Elly Sarahnia McCarthy was a 13 year old girl who died at the Women's and Children's Hospital on 7 February 2004.

1.2. Elly had become unwell on Saturday 24 January 2004. She had a headache and an elevated temperature and was vomiting. On Tuesday 27 January 2004 her mother took her to see a general practitioner who suspected a urinary tract infection. The GP referred Elly to the Noarlunga Health Service where further tests supported this diagnosis. An offer was made for admission to the hospital but Elly preferred to go home. She was given an injection in her left leg of Stemetil, a prescription for trimethoprim tablets, and allowed to go home. The Stemetil is an antiemetic, and the trimethoprim an antibiotic for the treatment of urinary tract infection.

1.3. On Wednesday 28 January 2004, Elly remained sick. She awoke that morning unable to move her left leg and had spasms in her left arm (see progress notes, Exhibit C9a). Elly's mother took her back to the Noarlunga Health Service that night. She was seen by Dr Jeff Phillips who noted her history and ultimately determined to refer her to Flinders Medical Centre for further assessment. Dr Phillips contacted the paediatric registrar at Flinders Medical Centre, Dr Romany Topsfield. He explained the situation over the telephone and Dr Topsfield agreed to receive Elly. Elly was transferred by ambulance to the Flinders Medical Centre, arriving at 00.50 hours on 29 January 2004.

1.4. At the Flinders Medical Centre, a very careful assessment was made of Elly by Dr Topsfield who gave evidence at the Inquest, and whose account I will review in more detail in due course. Dr Topsfield consulted with another doctor at the Flinders Medical Centre, Dr Farmer, the Emergency Department registrar. Dr Topsfield also consulted with her own consultant, Dr Everett, who was on-call but at home, and after a CT scan was carried out, it was decided that Elly needed to be transferred urgently to the Women's and Children's Hospital where she could have definitive treatment. She was transferred by ambulance to the Women's and Children's Hospital. The ambulance left the Flinders Medical Centre at approximately 4:30 am, and Elly was delivered to the Women's and Children's Hospital at approximately 4:50 am.

1.5. There is a dispute on the evidence between the clinicians and staff at Flinders Medical Centre on the one hand, and the ambulance officers on the other hand, as to Elly's neurological status at the time she was loaded onto the ambulance at Flinders Medical Centre. This matter was explored extensively at the Inquest and I will return to it in due course. Suffice to say that on arrival at the Women's and Children's Hospital, Elly was found to have suffered a major deterioration in her neurological status. Despite extensive treatment as the Women's and Children's Hospital, Elly died on 7 February 2004.

2. Treatment at Flinders Medical Centre

2.1. Dr Topsfield

Dr Topsfield gave a statement which was admitted in evidence as Exhibit C8. She also gave evidence at the Inquest. She is currently participating in the general practice training program and is working in general practice. In January 2004 she was

a paediatric registrar at Flinders Medical Centre and had already started to participate in the general practice training program. She was on duty on the night shift from 28 January 2004 till 29 January 2004 at Flinders Medical Centre.

2.2. She gave evidence that she received a telephone call at approximately midnight from a male doctor from the Noarlunga Health Service. He informed Dr Topsfield that he had a patient called Elly McCarthy aged 13 who he wished to transfer to the Flinders Medical Centre. He gave a history that she had been unwell for approximately a week with fevers and a headache, that she had been seen at the Noarlunga Health Service twenty-four hours earlier, that there was a presumptive diagnosis of urinary tract infection for which she had been treated with an antibiotic and antiemetic. She then represented to the Noarlunga Health Service that night and was unable to move her left leg. He informed Dr Topsfield that it was difficult to tell whether she was genuinely unable to move her left leg or simply that she did not wish to do so. He appeared to be concerned about Elly's social situation, but his concerns were ill founded, as it soon became obvious that Elly had an organic reason for her illness.

2.3. Dr Topsfield gave evidence that she was paged by the triage nurse at around 1:00 am when Elly arrived. Dr Topsfield saw Elly at around 1:15 am and carried out an extensive assessment and examination. Her notes were extremely detailed and it is plain that she provided a very high level of care to Elly. Indeed, Dr Klug who provided a report to the Court in this matter commented that Dr Topsfield's assessment was very appropriate and that the history, clinical findings and decisions recorded by Dr Topsfield were of a very good standard.

2.4. Dr Topsfield stated that from the outset it was obvious that Elly was quite unwell. Her colour, her position in the bed, her distress and her mother's concern all provided ample evidence of this. Dr Topsfield obtained a history from Elly and her mother, the bulk being from Elly's mother. Dr Topsfield placed an IV line in order to obtain blood for testing in the hope that it would be ready by the end of her examination. She stated that Elly complained of a headache which was constant, but not throbbing. The headache was predominately frontal and in the right temple. Elly had photophobia, which Dr Topsfield noted to be suggestive of intracranial pathology. It is pertinent to note that this was not the first time that photophobia had been observed. It had been noted by Elly's general practitioner, Dr Deborah Daniell on 27 January 2004.

2.5. Dr Topsfield's history went on to record Elly's weakness in the left leg was persisting and that she had had to crawl to the toilet that day. Her past medical history was unremarkable – she was a healthy child.

2.6. Importantly, at this point Dr Topsfield observed Elly's Glasgow Coma Score ("GCS") to be a score of 15 out of a potential total of 15. The Glasgow Coma Scale is a scale that has been developed to standardise what can be a very subjective thing, namely the assessment of a particular person's level of consciousness. It is devised in such a way that the same score should be recorded in relation to a particular individual at a particular time regardless of the subjective perceptions of the person who is making the assessment, providing always that the assessor is competent in assessing according to the scale.

2.7. Elly's GCS was not affected by the weakness in her left leg, because the GCS for motor movement (and the other two categories of assessment – eye opening and voice) are scored on the best response, and Elly's right leg was not impaired in any way. The purpose of the GCS is to assess general consciousness, rather than focal neurological impairments. Dr Topsfield helpfully informed the Court that a person who has been a paraplegic for some time can nevertheless score a GCS of 15 out of 15, notwithstanding what, in another individual, would be regarded as a serious motor impairment.

2.8. On occasions, Elly would exhibit a sign that would result in a reduction of one point in her GCS or possibly two points. She would exhibit confusion and make inappropriate statements such as "I want my blood back". This would have the result that her GCS during the period that Dr Topsfield observed her would occasionally vary between a lowest score of 13 and a highest score of 15.

2.9. As will already be apparent, I was impressed by Dr Topsfield as a witness. Her evidence was clear, considered, sincere and thoughtful. She displayed an excellent level of technical knowledge. She was clearly very much affected by Elly's death, at one stage breaking down during her evidence. Notwithstanding this, her evidence was carefully given, and quite clear. I have no hesitation in accepting her evidence in every respect.

2.10. Dr Topsfield explained that on neurological examination, Elly's left knee jerk and ankle jerks were pronounced. This demonstrated that the normal dampening effect

provided by the brain to the subconscious response of the nervous system was impaired. She noted that Elly's visual field was impaired. She had left hemianopia, meaning that her left field of vision was impaired bilaterally. Dr Topsfield could not assess Elly's fundi properly by reason of her photophobia. Her pulse was of good volume and regular which tended to discount a diagnosis of sepsis. The blood test results indicated an elevated white cell count which was supportive of the presence of an infective process.

2.11. The result of this assessment was that Dr Topsfield thought there was intracranial infection. She thought encephalitis or meningitis with or without an abscess. A bleed might be present. She thought that a tumour was another possibility although less likely.

2.12. Dr Topsfield spoke with Dr Farmer, who as I have already noted was the Emergency Department Registrar and the most senior person in the Emergency Department at that stage. Dr Farmer came in and assessed Elly's Glasgow Coma Score and agreed with Dr Topsfield's assessment. Dr Topsfield phoned her consultant, Dr Everett, and informed him of the situation. Dr Everett agreed that Elly should be given a CT Scan with contrast. He also said that IV antibiotics should be commenced immediately for the empirical treatment of the possible conditions already referred to. As no CT technicians were available over night it was necessary to page the CT radiologist and radiographers.

2.13. While awaiting the CT staff, Dr Topsfield maintained a close watch over Elly. She remained in the Emergency Department throughout. She did not have cause to go back to the paediatric ward at all during the time that Elly was in the hospital. At one stage Elly was moved to another cubicle closer to the nurses station so that she could be more closely observed. When Dr Topsfield was not at Elly's bedside, she was sitting in the nurses station from where she was able to watch Elly. When the CT staff arrived, Dr Topsfield, Dr Farmer, a nurse and Elly's mother went to the CT area. Dr Topsfield stated that while Elly was in the CT room she responded appropriately to commands. Dr Topsfield was provided a verbal report of the scan. It showed a significant cerebral oedema (swelling of the brain) with a non-enhancing collection along the interhemispheric tissue (subdural). This indicated that the dye which was used for contrast in the CT Scan was not getting into that area which in turn indicated that the fluid was not blood. It was therefore either old blood or pus.

2.14. Dr Topsfield stated that she rang Dr Everett from the CT room. She had stopped the IV fluids which had been provided to Elly for her dehydration once she realised that she had raised intracranial pressure, as dehydration can have a minor impact on intracranial pressure indirectly through replacement of spinal fluid. Dr Everett and Dr Topsfield agreed that Elly needed to have her brain decompressed and that this should be done at the Women's and Children's Hospital where there were appropriate facilities, both surgical and paediatric intensive care.

2.15. Dr Everett directed that Elly be transferred by ambulance as soon as possible. Dr Topsfield then called the Women's and Children's Hospital Emergency Department and spoke to a Dr Williams. They discussed the transfer and Dr Williams was willing to accept Elly.

2.16. Dr Topsfield stated that "the most important thing in Elly's case was watching her GCS", and she was certain that she would have discussed Elly's GCS score with Dr Williams. It was Dr Farmer who called for the ambulance. She attended to that while Dr Topsfield was speaking to Dr Williams at the Women's and Children's Hospital.

2.17. While Dr Topsfield was awaiting the arrival of the ambulance, she completed her documentation so that she would be able to photocopy her notes and send them with Elly in the ambulance. She also, together with Dr Farmer, carried out an arterial blood gas analysis to see how Elly's carbon dioxide levels were behaving. Dr Topsfield stated that Elly was "blowing off" the CO_2 herself which was a good sign.

2.18. Dr Topsfield stated that when she first saw the ambulance officers she was near Elly's cubicle. She only remembered speaking to one of the ambulance officers – a male. She explained the history of headaches and fever and the focal neurological signs and the CT Scan results, and the need for transfer to the Women's and Children's Hospital for definitive treatment. Dr Topsfield was at pains to emphasise the need to monitor Elly's Glasgow Coma Score. She told the ambulance officer that the GCS was 13 to 15 while Elly was in the Emergency Department. Dr Topsfield's last note in the progress notes states "GCS remains 13 –15/15". She stated that this was an overall summary of Elly's GCS throughout her stay in the Emergency Department.

2.19. Dr Topsfield stated that the ambulance officers said nothing about Elly's neurological condition or her Glasgow Coma Score. Dr Topsfield gave her copied notes to the ambulance officer in front of Elly's cubicle. Neither ambulance officer expressed any concern to Dr Topsfield about Elly's proposed transfer or her Glasgow Coma Score.

2.20. Dr Topsfield said that as Elly was leaving the Emergency Department she said good-bye to Elly and words to the effect that she hoped all went well. Dr Topsfield stated that Elly said goodbye in return and raised her right hand to wave. Dr Topsfield stated that if she had done a Glasgow Coma Score at that time, it would certainly have been 15 – it would have to be as high as that in order for Elly to have said good-bye and waved.

2.21. Dr Topsfield rang the Women's and Children's Hospital at 7.00 am that morning to see how Elly was. She stated that she was horrified when Dr Williams told her that Elly had arrived there with a Glasgow Coma Score of 7 and had to be intubated and resuscitated. Dr Williams expressed surprise because she had been expecting a Glasgow Coma Score of between 13 and 15. Dr Topsfield replied that the GCS was indeed between 13 and 15 when Elly left. Dr Williams replied that there was "some confusion" about what it was when Elly left the Flinders Medical Centre but did not elaborate. It is likely that Dr Williams was referring to information which she had been provided by the ambulance officers. I will address that issue in due course.

2.22. Dr Topsfield stated that she would have been concerned about dispatching Elly in an ambulance with a Glasgow Coma Score of 12 or less or if she had had a sustained deterioration of 2 points. Dr Topsfield stated that the 2 points deducted in Elly's case were, depending on her reaction at the particular time, 1 point for speech if she was confused or vague, and 1 point for eye opening if she was drowsy. However, there was no indication of any anticipated fall in her Glasgow Coma Score.

2.23. Dr Topsfield stated that if this had been anticipated, Elly could have intubated and ventilated at the Flinders Medical Centre and a retrieval team organised. She has stated that she had thought over and over about this issue in the two and a half years since it happened and spoken to other doctors, but could not see what she could have done differently.

2.24. In cross examination, counsel for the South Australian Ambulance Service suggested to Dr Topsfield that at about the time of the handover from Dr Topsfield to the

ambulance crew, one of the ambulance officers had said words to the effect "she doesn't look like she is a 12 –15 to me, she looks lower than that". Dr Topsfield denied that these words were said in her presence at any time. She stated that if they had been raised in her presence, she would have immediately obtained a second opinion.

2.25. The Flinders Medical Centre notes, Exhibit C9a, record that Elly's Glasgow Coma Score was 15 at each of the following times: 0110, 0200, 0300, 0340. These recorded observations strongly support Dr Topsfield's version of events.

2.26. During cross examination Dr Topsfield was informed that according to Dr Everett's recollection of the Glasgow Coma Score as reported to him by Dr Topsfield that night, the Glasgow Coma Score was at least 12 but "most people were getting it at 14". Dr Topsfield responded that she would be surprised if she said that the GCS was ever as low as 12, that she did not recollect her exact wording, and that in any event in her opinion Elly never had a Glasgow Coma Score as low as 12 during the time she was with Dr Topsfield.

2.27. Dr Topsfield was adamant that Elly's Glasgow Coma Score while under her care was between 13 and 15. She stated that her recollection was not based on mere numbers alone; that at no time was it necessary to give any painful stimulus to Elly and that to get a GCS as low as 12, one would need to administer a painful stimulus for at least one of the three parameters on which the score is assessed.

2.28. Dr Topsfield was questioned about whether, with the benefit of hindsight, it would have been better for Elly to have been transferred directly from Noarlunga Health Service to the Women's and Children's Hospital. She stated that there was nothing in the history provided by Dr Phillips that made her think that Elly required intensive care or neurosurgery. Had either of those been suggested, Dr Topsfield would have told Dr Phillips to send Elly to the Women's and Children's Hospital. Dr Topsfield said that it was a "significant surprise" that Elly was as sick as she was on arrival at the Flinders Medical Centre.

2.29. Dr Topsfield was asked about her understanding of the South Australian Ambulance Service call categories and crewing policies at that time. She stated that she was unfamiliar with them. She believed that Dr Farmer had told her the call out would be a category 2. Dr Farmer had told her that the crew would be a paramedic team and

Dr Topsfield expected therefore that they would have a skill level greater than an ordinary ambulance team. She stated that she did not really know what specific level of skill they would have. However, she thought that the case required the most senior and skilled team available. She thought that Elly was critical, but stable. She acknowledged that there was potential for acute deterioration, but stated that that was why it was necessary to get Elly to the Women's and Children's Hospital as soon as possible. She said that there was nothing in the presentation during the time she saw Elly that led her to think that the deterioration might happen in the next 20 minutes.

2.30. At the end of her evidence, Dr Topsfield reinforced her earlier views about Elly's Glasgow Coma Score:

> 'I'm absolute sure in my mind and heart that Elly's GCS was 15 when I last saw her'.'

2.31. Dr Elizabeth Farmer

Dr Farmer gave evidence at the Inquest. She holds a fellowship in Emergency Surgery. On the night of 28 and 29 January 2004 she was working as a registrar in the Emergency Department at the Flinders Medical Centre.

2.32. She stated that she first became aware of Elly when she presented in the Emergency Department. She had been informed by Dr Topsfield that she was expecting Elly to come from Noarlunga Health Service. Dr Farmer asked Dr Topsfield if she was happy to deal with Elly. Dr Topsfield responded that she was concerned about Elly's neurological situation. Dr Farmer then confirmed that Elly had left sided weakness. Her GCS was 15 but there was something "intracranial going on".

2.33. Dr Farmer considered that Elly was very sick and needed to have a CT Scan and broad-spectrum antibiotics and that Dr Everett should be consulted. Dr Farmer did not make any entries in Elly's notes – the documentation was all kept by Dr Topsfield.

2.34. Dr Farmer went to the CT room when Elly had her scan. Dr Farmer was interested to see the results. She spoke to Dr Topsfield and Dr Justus who was the CT Registrar. The latter went through the CT results with doctors Farmer and Topsfield very clearly and Dr Topsfield immediately rang Dr Everett and described the result of the CT tests. Dr Topsfield reported that Dr Everett wanted Elly to be transferred to the Women's and Children's Hospital. Dr Farmer offered to ring the ambulance because Dr Topsfield needed to contact the Women's and Children's Hospital. She had given

a statement to Constable Muir which was tendered as Exhibit C10 in these proceedings in which she had recalled that when requesting the ambulance she had asked for an "intensive paramedic crew". She was shown a transcript of the actual conversation which took place between herself and the South Australian Ambulance Service Communications Officer, Ms Tripptree. That transcript is an attachment to Exhibit C12, which is a record of interview between Ms Tripptree and Detective Senior Constable McLean admitted as Exhibit C12 in these proceedings. The transcript of the telephone conversation was acknowledged by both Dr Farmer and Ms Tripptree as an accurate record of the conversation.

2.35. The transcript of the conversation shows that in fact Dr Farmer asked for "a proper paramedic crew". In evidence at the Inquest she stated that she had intended to convey that she wished to have a crew with intubating skills in case Elly deteriorated on transfer. She had wanted an intensive care paramedic to accompany Elly. She said that she made the call for the ambulance without the hospital notes in her possession. She had been aware that Elly's Glasgow Coma Score had varied slightly according to accounts provided to her by Dr Topsfield. In the transcript of the telephone conversation Dr Farmer is recorded as saying "GCS is about 12, it varies a bit from 12 to 15". Dr Farmer said in evidence that she had been mistaken during that telephone conversation because she did not have Elly's notes to hand, but was aware that there had been a slight variation. She stated that on the two occasions she herself had checked Elly's Glasgow Coma Score, it was 15.

2.36. She stated that she did not have a good understanding of the ambulance service call categorisation system. Her only concern was to get Elly to the Women's and Children's Hospital as soon as possible. Dr Farmer had no further involvement with Elly after this time.

2.37. In answer to questions from counsel for the South Australian Ambulance Service, Dr Farmer agreed that the transcript of the telephone conversation showed that she had agreed to a category 3 priority for the ambulance. She was asked what she thought an intensive paramedic would have been able to do for Elly in the ambulance. Dr Farmer replied that she thought such a person would be able intubate Elly if her GCS dropped suddenly. She was asked if she was aware that an intensive care paramedic could only intubate a patient without using drugs. Dr Farmer was not

aware of this, but pointed out that there are circumstances in which it is possible to intubate a patient without the use of drugs.

2.38. Dr Farmer stated that she was not aware of the differences between categories 1, 2 or 3 in relation to the South Australian Ambulance Service. In particular, she was not aware that the category assigned to the call had any necessary bearing on the qualifications that the attending crew would have.

2.39. The transcript of the telephone conversation shows that the following exchange took place between Dr Farmer and Ms Tripptree:

> 'Ms Tripptree: What category would you like, how soon would you
> Dr Farmer: As soon as you can get here really
> Ms Tripptree: What area is it basically – category 2 is lights and sirens, category 3 is straight away without lights and sirens. What would you prefer?
> Dr Farmer: Straight away without lights and sirens, I don't want any accidents.'

In evidence, Dr Farmer stated that it was only because Ms Tripptree offered the choice of lights and sirens that she even considered the issue of category. She did not take the initiative to request a preference as to category. She stated that if she were confronted with the same situation today, she would do things slightly differently. She would have spoken to a neurosurgeon or neurologist at the Flinders Medical Centre. She did point out that at the time she was only peripherally involved, because the primary care was being provided by Dr Topsfield.

2.40. Dr Farmer stated that the nurses had informed her that Elly had tried to assist in getting herself onto the barouche for transfer into the ambulance and this was suggestive of a GCS of 15. She stated that if Elly had a GCS of 7 or 8 while at the Flinders Medical Centre she would have intubated and ventilated her. She would have expected the nursing staff to have raised the fact of such a GCS with her or Dr Topsfield if it had been observed by them. She stated that if Elly had had a significant deterioration in her GCS she would have kept her at the Flinders Medical Centre and arranged for neurosurgeons to come to the Flinders Medical Centre to treat Elly.

2.41. Dr Farmer recalled that at one stage she had briefly discussed with Dr Topsfield whether to use a retrieval team from the Women's and Children's Hospital. However Dr Topsfield said that Dr Everett had wanted Elly to be transferred as soon as possible, and that because her GCS was 15 and there was no significant deterioration

it was appropriate to transfer her for definitive care at the Women and Children's Hospital. The decision to transfer to Women's and Children's Hospital by ambulance was ultimately Dr Everett's. Dr Farmer stated that it would not have been possible for her or for Dr Topsfield to have attended Elly in the ambulance as that would have left the Emergency Department or the Paediatric Department short staffed for the night.

2.42. Dr Farmer stated that at present that there is one neurosurgical registrar for the State after hours. If that had been the case in 2004, the availability of that person would have depended on where they were, whether they were operating at the time, and how far away they were. Furthermore, the availability of the retrieval services of the Women's and Children's Hospital and the Flinders Medical Centre would both have depended on whether those services were on a job at the time or not.

2.43. At the end of her evidence, Dr Topsfield reinforced her earlier views about Elly's Glasgow Coma Score.

2.44. Dr David Everett

Dr Everett gave evidence at the Inquest. He is a consultant paediatrician at the Flinders Medical Centre. He also held that position in January 2004. On the night in question he was the out of hours on-call staff paediatrician. He recalled that Dr Topsfield had called him at approximately 3.00 am in relation to Elly.

2.45. He provided an account of the conversation which corroborated the version given by Dr Topsfield. He was asked about the recollection in his record of interview that Dr Topsfield had given a GCS of 12 to him. He acknowledged that he may have been incorrect in his recollection of this.

2.46. Dr Everett stated that he was surprised when the CT results came back. He stated that this was the first infection of this kind that he had been involved with in 20 years of practice as a paediatric consultant.

2.47. He stated that having obtained the CT result, the question was what should be done next. He said that with a large collection of intracranial fluid, the definitive treatment was surgical decompression of the head. He stated that he had a vivid recollection of double checking the Glasgow Coma Score observations with Dr Topsfield. He understood that Elly had been at the Flinders Medical Centre for approximately 3 hours and her GCS had remained stable for that time. He said that he took the

decision that the best option was to transfer Elly to the Women's and Children's Hospital for paediatric surgery supported by paediatric intensive care facilities which were only available at that hospital. He stated that he asked Dr Topsfield to arrange the transfer as soon as possible and to ring the most senior paediatrician at the Women's and Children's Hospital to make suitable arrangements. He said that he was aware that at that time of the morning the ambulance trip would be very rapid. He said that he questioned Dr Topsfield as to how mature Elly was to establish that she could not have been treated neurosurgically at Flinders Medical Centre as an adult. He did this because some 13 year olds are sufficiently mature to be treated as an adult, however, on Dr Topsfield's description, he was not satisfied that this would have been appropriate.

2.48. Dr Everett stated that he was very much aware that there was a potential for deterioration in Elly's case, but that on the other hand she needed to have the decompression. Time was of the essence and there had been no signs of imminent deterioration as she had been stable for a few hours. If she had had a falling GCS he would have kept her at the Flinders Medical Centre because of the possibility of "coning" or herniation of the brain. In that event, he would have arranged for her to be intubated, hyperventilated and treated with the drug Mannitol.

2.49. He stated that his impression as at January 2004 was that the Flinders Medical Centre Neurosurgery Department was strictly an adult service and was most reluctant to become involved in the management of children. He stated that hyperventilation and Mannitol would produce a little bit of brain shrinkage for a very short amount of time. However, without surgery the outcome was inevitable. He stated that at 3.30 in the morning it would have been more time consuming for him to negotiate with the Neurosurgery Department at the Flinders Medical Centre to persuade them to accept Elly as a patient than it would have been to get Elly to the Women's and Children's Hospital. He said that if he had contacted the Neurosurgery Department he would have had to make a 25 minute trip into Flinders Medical Centre himself to look at Elly, then ring the neurosurgeon and try to persuade that person that she had to be treated at the Flinders Medical Centre. He took the view that it was better for her to go to the Women's and Children's Hospital, but did state that he would have done those things if he had thought that Elly was deteriorating rapidly.

2.50. Dr Everett pointed out that it would not have been necessary to intubate Elly in the ambulance in order to ventilate her in the event that she had respiratory arrest. He pointed out that this could be done by a bag and mask. He commented that her airway was not the problem and that intubation would not have been any more effective than ventilation with a bag and mask.

2.51. Dr Everett stated that he considered that Dr Topsfield did an excellent job in assessing her patients and that he had a very high regard for her skills. Even so, he had double-checked her assessment of Elly's Glasgow Coma Score because it was so crucial. He conceded that he could have been mistaken in thinking that she had reported it as low as 12 to him. He stated that they had done everything that they could do to set Elly up for her transfer to the Women's and Children's Hospital, including warning the Women's and Children's Hospital of her impending arrival.

2.52. Dr Everett stated that if the Glasgow Coma Score really was 8 on the tarmac outside Flinders Medical Centre as was asserted by the SA Ambulance Service personnel involved in Elly's transfer, he was amazed that the doctors and ambulance crew allowed her to be loaded. He stated that it is possible for a person to cone in the space of 20 minutes. I will address the disparity in the evidence about Elly's GCS later on in these findings.

2.53. He said that he had the impression talking to Dr Topsfield the next morning that she had separated from Elly almost at the back of the ambulance.

2.54. Dr Everett stated that the drug Mannitol is much more effective for general swelling of the brain than for a localised pressure sac such as Elly had. He said that if Elly did suffer an acute deterioration in the ambulance the ambulance crew would have to support her airway by bag and mask. He stated that if she had stopped breathing in the ambulance it would have only been because she had coned. He stated that if she coned during the trip nothing the ambulance crew could have done would have altered the outcome. The only thing that could have done that was surgical decompression.

2.55. He stated that he had two options available to him after he learnt about the CT scan results: either to keep Elly at the Flinders Medical Centre or transfer her. If he was to transfer her, there was a need to get on with it very quickly. He described it as a "race against time".

2.56. Dr Everett noted that the staff at the Noarlunga Health Service had been very uncertain even to the point where they had considered the possibility that Elly was "putting it on". However, Dr Topsfield had very quickly assessed the situation differently. He stated that he really admired Dr Topsfield's assessment. She was on to the neurological issue from a very early time.

2.57. Nurse Patricia Agzarian

Nurse Agzarian is a registered nurse having obtained her qualifications in 1998. She works in the Flinders Medical Centre Emergency Department and was employed in that capacity in January 2004. She became aware of Elly when she was requested to escort her to the CT room. She was interviewed and her record of interview became Exhibit C13 in these proceedings. She understood that Elly had left sided weakness and required a brain scan to determine why. She stated that once they arrived at the CT room Elly tried to assist in her transfer from the stretcher onto the CT bed. After the CT scan Nurse Agzarian had to assist Elly back onto the stretcher because the transfer in that direction involved her left side where she had weakness. Therefore she could not do it alone. However Elly responded appropriately to her at that time and on reflection Nurse Agzarian would now score her GCS at 15 if she had formally assessed it at that time.

2.58. At around about 4.00 am, Nurse Agzarian organised an antibiotic infusion at Dr Topsfield's request. Later she saw the ambulance arrive. She went into Elly's cubicle and told her that she was transferring to the Women's and Children's Hospital and that Elly responded appropriately. Nurse Agzarian noticed that there were two ambulance officers but she could not recall if both came into the cubicle. She explained Elly's condition, her test results, the fact that she was having antibiotics and required transfer to the Women's and Children's Hospital to one or both ambulance officers. She assisted in moving Elly onto the ambulance stretcher. Nurse Agzarian recalled that once she was outside the cubicle both ambulance officers were present.

2.59. At that stage Nurse Agzarian recalled that Elly's eyes were open. She returned to the nursing station. She stated that the ambulance officers did not question Elly's Glasgow Coma Score with her. She stated that Elly was not making any grunting noises. She denied that she said that Elly goes "in and out of that state all the time it is fairly normal for her" as asserted by one of the ambulance officers. Similarly she denied saying, "yes she has been like this the whole time" as asserted by one of the

ambulance officers. She recalled Dr Topsfield saying good-bye to Elly and Elly waving back to Dr Topsfield.

2.60. Nurse Agzarian saw no change in Elly's condition between the time at which she took her for her CT scan and the time when Elly was leaving with the ambulance officers. She stated that Elly was sometimes drowsy, but her eyes would open when something happened.

2.61. Nurse Agzarian stated that if the ambulance officers had queried or questioned Elly's Glasgow Coma Score with her she would have formally assessed Elly's Glasgow Coma Score jointly with the officers there and then. If that process had not resolved the dispute, she would then have involved Dr Topsfield. However, she stated that the ambulance officers did not raise any concerns about Elly's conscious state with her. She said that she did not see Elly loaded into the ambulance, but the fact that Elly waved good-bye to Dr Topsfield gave a good indication that her Glasgow Coma Score was 15 at that time.

3. Summary of the Flinders Medical Centre witnesses

In summary the witnesses from the Flinders Medical Centre have given accounts which are consistent with each other. I was extremely impressed by Dr Topsfield as a witness. Her standard of documentation was extremely high, and she is clearly an extremely competent doctor. I see no reason to doubt her account of events, nor the accuracy of her documentation. The accounts of Dr Everett, Dr Farmer and Nurse Agzarian simply serve to reinforce my confidence in Dr Topsfield's account.

4. South Australian Ambulance Service Witnesses

4.1. As noted the Communications Officer for the ambulance service Ms Anna Tripptree provided a statement which was admitted as Exhibit C12 in these proceedings. She also gave oral evidence. She stated that she was on duty in the early hours of 29 January 2004 at the South Australian Ambulance Service taking calls that came in.

4.2. She stated that once it was established that Elly was to be transferred from the Flinders Medical Centre to the Women's and Children's Hospital she categorised the call as a medical transfer. This meant that a particular set of questions would be asked which would be slightly different from the assessment process involved when

taking a call from a non medically qualified caller. Because the call was categorised as a medical transfer, the default assumption of the categorisation system is that the highest possible category to be assigned the call is category 3. However it can be upgraded to a higher score if that is needed. According to Ms Tripptree, it could be accorded a higher category if there was a potential for threat to life within 12 minutes. She stated that on the information provided by Dr Farmer, she correctly categorised the call as category 3. She stated that she assumed that the words "proper paramedic crew" meant that there would be two paramedics in the crew. She stated that categories 1 and 2 would usually be assigned intensive care paramedics. However, there are not always intensive care paramedic crews available, and the situation changes from day to day. She stated that generally doctors in the public health system have an understanding of the category system. She said that she raised category 2 as a possibility because Dr Farmer had made it plain that time was an issue.

4.3. By reference to a "screen dump" from the South Australian Ambulance Service computer system, which was part of Exhibit C12, Ms Tripptree was able to say that the ambulance arrived at the Flinders Medical Centre at 4.16 am, it left the Flinders Medical Centre at 4.30 am, it arrived at Women's and Children's Hospital at 4.51 am, it left Women's and Children's Hospital at 5.31 am and it returned to base at 5.52 am.

4.4. Ms Tripptree stated that if Dr Farmer had requested an intensive care crew in as many words, she would have spoken to her team leader. She stated that the possible response times would have been different if an intensive care crew had been required and had had to come from a remote location. In that event the response time might have been longer and then it would have been necessary to negotiate with the hospital whether it was preferable to wait for the intensive care paramedics, or to settle for ordinary paramedics with the trade-off that Elly would get to the Women's and Children's Hospital sooner.

4.5. Ms Tripptree acknowledged that the system for categorising or allocating ambulance call categories is such that by choosing the category according to the information that the caller provides, the qualifications of the crew are designated automatically. She stated that the qualifications of crew members is not a subject that as a call taker she was required to consider. She simply considered the patient's assessment, and then assigned a category. She stated that she was satisfied on the information provided that the appropriate category was 3. She had assumed that the crew would be a

paramedic crew consisting of 2 paramedics. She stated that if paramedics have not been available she would have expected the crew to be 2 intensive care paramedics. She had not expected that the crew would be 1 paramedic and 1 trainee, as turned out to be the case with Elly's transfer.

4.6. She repeated that determination of the skills of the crew was not the responsibility of the call taker. She saw no need to pass on to the dispatch operator the fact that Dr Farmer had requested "a proper paramedic crew" because the system simply required that she obtain the patient information.

4.7. She stated that she assumed that Dr Farmer had an understanding of how the South Australian Ambulance Service assesses its categories. She said that most doctors in her experience do have an understanding as to South Australian Ambulance Service categorisation procedures. She acknowledged that it is the responsibility of the call taker to elicit the appropriate information. She stated that on the information elicited on the night in question, the category assigned was the correct category.

4.8. Paramedic Marissa Delfino

Marissa Delfino was, at 29 January 2004, a paramedic employed in the South Australian Ambulance Service. She gave evidence at the Inquest, and also made a statement which was admitted as Exhibit C14 in these proceedings. She told the court that she commenced her shift at 5.00 pm on 28 January 2004 and completed it at 7.00 am the following.day. She stated she was working with Bernard De Lyster, student ambulance officer on that shift. She said that the entries on the patient report form (Exhibit C6a) were not hers. As will be seen in due course, they were entered by Mr DeLyster.

4.9. On arrival at the Flinders Medical Centre, Ms Delfino said that she and Mr DeLyster were shown to Elly's cubicle by the triage nurse. Mr DeLyster was ahead of Ms Delfino. He found the patient and spoke to the doctor. Ms Delfino entered the cubicle to find a nurse there together with Elly and her mother. The doctor and Mr DeLyster were just outside the cubicle. Mr DeLyster was receiving a hand-over from the doctor. Ms Delfino could hear parts of the hand-over, but not all of it. Her recollection of what she heard was that the case involved a transfer to the Women's and Children's Hospital with possible encephalitis and a fluctuating GCS of 12-15.

4.10. Ms Delfino stated that after she heard the comment about the fluctuating GCS she walked up to the nurse and to Elly. She spoke to Elly and introduced herself but got no response. She said words to the effect "My name's Marissa from the ambulance service". Elly did not respond. Ms Delfino felt for Elly's radial pulse and at that time applied pressure to Elly's nail bed. Elly withdrew from the "pain" involved in that pressure. Elly did not speak but simply groaned. Her eyes were definitely not open.

4.11. Ms Delfino stated that she did not carry out a formal GCS assessment for Elly. However she queried Elly's GCS. The nurse said that Elly fluctuated between 12 and 15, but that was normal for her. Ms Delfino stated that the doctor and the nurse were both present when she queried the GCS. Ms Delfino stated that she asked whether Elly had been conversing with them at all, and that the nurse had said yes. Elly was then placed on the ambulance stretcher. Ms Delfino stated that she asked the doctor whether the Women's and Children's Hospital knew that they were coming with the patient "like this" and the doctor said yes. Ms Delfino stated that at that point she was happy to transfer Elly.

4.12. She stated that she would have expected a patient with a GCS of 12 – 15 to be more alert. She stated that when she queried the GCS with the nurse, the doctor and Mr DeLyster were both present, right next to Elly's barouche. Ms Delfino said that she commented to Mr DeLyster that Elly did not look like she was a 12 – 15 and that Mr DeLyster agreed. Ms Delfino told Mr DeLyster to get all of the paper work and read it because of what Ms Delfino regarded as Elly's depressed conscious state.

4.13. She stated that Elly was then moved out to the ambulance. Ms Delfino had no memory of Dr Topsfield speaking to Elly and Elly waving to her. She recalled Elly's mother following them out, but did not recall Elly saying goodbye to her mother. Ms Delfino stated that once Elly was in the back of the ambulance she left Mr DeLyster in the back with Elly and asked him to do a proper GCS, to monitor her and to let Ms Delfino know if there were problems. She said that she was the driver. Before she drove off she made sure that Mr De Lyster did a blood pressure check. She said they left the Flinders Medical Centre at 4.30 am and she drove to the hospital. She said that she constantly asked Mr DeLyster if anything had changed and he reported that there was no change. The trip took 21 minutes and she stated that if she had used lights and sirens there would not have been a dramatic difference to the

time taken for the journey because at that hour of the morning there was very little traffic.

4.14. She stated that at the Women's and Children's Hospital she alighted from the ambulance and asked Mr DeLyster whether he had done a proper GCS. She applied pressure to Elly's nail bed and Elly withdrew from the "pain". She stated that she asked if Mr DeLyster had checked Elly's pupils and he said that they were size 6 and non reactive. She then did a pupil check herself and immediately told the Women's and Children's Hospital staff that the pupils were six and non reactive. Elly was then moved into the resuscitation room.

4.15. She stated that she had a conversation with a male doctor at about this time. She stated that he seemed to be distracted but did say that Women's and Children's Hospital were expecting a patient with a higher GCS. During this period, Mr DeLyster was writing up the Ambulance Service patient case card. Ms Delfino contacted the South Australian Ambulance Service shift manager to say that Women's and Children's Hospital was "in a bit of a panic" about the matter (T223). The shift manager asked that she and Mr DeLyster put in an incident report. Ms Delfino told the shift manager that she and Mr DeLyster had checked with the doctor at the Flinders Medical Centre before taking Elly.

4.16. Ms Delfino was shown Exhibit C6c by her own counsel. The document states as follows:

> 'Metropolitan Shift Manager Report
> Date 28 Jan 04 Wednesday Night Shift MD2 Leonie Wilton
> Operational Issue
> Description: M171 crew transferred a 13 yr old with encephalitis (FM->WCH)
> Crew noted a discrepancy between the GCS (12-15) given at FMC with their initial GCS (7-8) but were told that she was fluctuating. The handover was apparently not extensive and the crew was advised that WCH was expecting. They did not think to question the difference in their GCS with the staff at FMC and accepted the pt. The crew also did not think to consult WCH & received a very panic-stricked reception when they arrived with the child (who in their words hadn't changed from their initial assessment). WCH perceived that the child must have had a dramatic deterioration and questioned why FMC hadn't kept the pt.
> Action taken: Listened to tapes (initial transfer from Noarlunga hosp which booked child as a cat 4, then FMC Dr who booked as a cat 3 & wanted a "proper paramedic crew") Asked for incident report, copy of case card & discussed some learning points about the

> case with the crew who is fairly junior. Have advised MD1 and left copy of relevant info in case a complaint is lodged, but heard nothing during last hr of shift.'

4.17. Ms Delfino's counsel asked her whether she agreed with the statement in Exhibit C6c that the crew did not think to question the difference in their GCS with the staff at FMC. Ms Delfino stated that she did not agree with that statement. She stated that she was aware that she could have contacted her shift manager while she was at FMC but she did not because she was reassured by the doctor.

4.18. It was put to Ms Delfino in cross examination that both Dr Topsfield and Nurse Agzarian denied that the GCS was queried with them. Ms Delfino disagreed and insisted that it was queried. It was also put to her that Nurse Agzarian denied having said that Elly went in and out of her then conscious state (i.e. "fluctuated"). Ms Delfino adhered to her own position.

4.19. Ms Delfino acknowledged that in her record of interview she had given an opinion that at the Flinders Medical Centre Elly's GCS would have been 10. She stated that she now was of the view that she would estimate Elly's then GCS at 7. In her record of interview she had referred to Elly having "purposeful movement", but when giving evidence had no recollection of any such purposeful movement. She agreed that her record of interview was inconsistent with her evidence at the Inquest in this respect.

4.20. In cross examination Ms Delfino stated that she would consider that close neurological monitoring would mean taking a GCS every 5 minutes. She stated that the handover to Mr De Lyster was given by the female doctor and not the nurse. She stated that the nurse to whom she spoke had used the expression "drowsy" to describe Elly's conscious state. She stated that she thought the doctor had heard what she said and that she felt reassured by the nurse's statement that Elly fluctuated in and out of her present state. On this basis, Ms Delfino stated that she assumed that the FMC staff were agreeing that Elly's then state was less than a GCS of 12.

4.21. It was put to Ms Delfino that Elly had spoken to her mother but she stated that she did not recall this and agreed that if it had occurred it would be inconsistent with her assessment of Elly's conscious state. It was put to her that Dr Topsfield gave an account of Elly having said goodbye to Dr Topsfield and waving. She stated that she did not recall this and agreed that had it occurred it would be inconsistent with her

own assessment. She was also told that Nurse Agzarian gave a similar account and she repeated that it did not accord with her recollection.

4.22. She stated that she did not make any observation of Elly's pupil size until they reached the Women's and Children's Hospital.

4.23. It was put to her that Mr DeLyster had made a statement to Senior Constable Elliott which was later admitted in these proceedings as Exhibit C15 in which Mr DeLyster stated that Elly's eyes were open the entire time that they were at the Flinders Medical Centre. Ms Delfino stated that she did not agree with Mr DeLyster in that respect and that Elly had never spontaneously opened her eyes or spoke.

4.24. Ms Delfino was asked in cross examination whether she could refuse to transport a patient. She stated that an ambulance officer could not refuse to transport a patient if a doctor was insisting that the patient be transported. She stated that in that circumstance an ambulance officer would have to refer the matter to the ambulance service medical officer.

4.25. She was asked in cross examination whether she knew anything about the circumstances in which an entry in the copies of the patient record card retained by the South Australian Ambulance Service was altered (it will become apparent in due course that the patient record card is a pro forma document which is issued by the SA Ambulance Service as a multiple copy document. It contains a green page, a pink page and a white page, each being identical to the other apart from the colour, and a descriptor for each being green copy – "office copy"; pink copy – "audit copy"; and white copy – "hospital copy". The green copy is the top sheet of the document and the pink copy appears immediately thereunder. Both of those copies are apparently "self-inking" in the sense that when the top (green) copy is written upon, a corresponding entry appears on each of the pink and white copies automatically. It transpired in the course of the Inquest that the white copy which was left at the hospital contained an entry which had been crossed out in the green and pink copies retained by the ambulance service. An observation of pupil size and reactivity apparently taken at 4:30 am recorded on the hospital (white) copy that Elly's pupil size was 6 for right and left pupils and non-reactive at that time. This entry was crossed out on both the green and pink copies. Mr DeLyster provided an explanation for this during his evidence which I will relate in due course). Ms Delfino had no

knowledge of the amendment that was made to the pink and green copies of the patient report form.

4.26. Mr Bernard DeLyster

Mr Bernard DeLyster gave evidence at the Inquest. He stated that he achieved the qualification of paramedic in the South Australian Ambulance Service in mid 2004 but that in January 2004 he was a student ambulance officer. He had been dealing with patients for approximately eighteen months as at that date. His record of interview which has already been referred to was admitted as Exhibit C15 in these proceedings.

4.27. Mr DeLyster was an unconvincing witness. There were relatively few things which he clearly recalled when giving evidence and a great many things about which his recollections were vague or nonexistent. I found it difficult to reconcile his several clear recollections with his more general vagueness. In a number of respects I do not accept his evidence.

4.28. He identified Exhibit C6a, the hospital copy of the ambulance patient report form, as being entirely in his own handwriting. Broadly speaking, he gave an account of events that was consistent with that of Ms Delfino, but inconsistent with the Flinders Medical Centre witnesses.

4.29. His evidence as to the handover was rather vague. At first he said that the handover was given to himself and his partner by the doctor and the nurse. Later he said that the handover came from the doctor only. He said that the handover took place in the cubicle area.

4.30. He stated that he did not recall the doctor suggesting that he should pay attention to Elly's GCS. He said that he looked at Elly but did not take any further observations than that while at FMC. He said it seemed to him that her conscious level was quite low. He said her eyes were open but that she was not speaking, she was just making noises. He stated that he assessed her then conscious state at a GCS of 8 by reference to the patient report form entry which he made at 4:30 am. That entry showed a GCS total of 8.

4.31. Mr DeLyster said that he could not recall exactly what transpired when he first saw Elly in the cubicle. He could only recall that she was not talking and that her eyes

were open. He could not recall if Ms Delfino said anything to him, but he stated that he did remember that Ms Delfino queried Elly's GCS with the nurse. He recalled also that the nurse responded that Elly fluctuated in and out of this state.

4.32. He stated that he did not see Elly waving goodbye to Dr Topsfield. He did not remember if he was at the head or at the feet of Elly's stretcher. He did recall that Elly's mother accompanied them out to the ambulance but did not recall Elly saying goodbye to her mother or her mother saying goodbye to Elly. He could not recall Ms Delfino giving him any instructions as to what to do in the ambulance and what observations to take of Elly.

4.33. He was shown the entry in the patient report form (hospital copy) which recorded in his own hand that Elly's pupil size was 6 and un-reactive at 4:30 am. A copy of the office copy of the form was shown to him and he identified that on that copy he had crossed out the recorded pupil observations for 4:30 am. That copy of the patient report form was admitted and marked Exhibit C16 in these proceedings. It was the green version of Exhibit C6a referred to earlier. He stated that he crossed out the entry in question because the observation was made at some time later than 4:30 am. He said that it was in fact made approximately half way along the journey at a time closer to 4:40 am. He made this alteration some time after the ambulance had departed from the Women's and Children's Hospital, thus explaining why the version left with the Women's and Children's Hospital (Exhibit C6a) did not have the same crossing out for that observation.

4.34. Mr DeLyster stated that there was no difference between Elly's condition in the ambulance at the commencement of the journey and her condition as she presented initially at Flinders Medical Centre when first seen in the cubicle. He stated that the first time he checked her pupils was at approximately 4:40 am. He noted that they failed to dilate at that time but did not appreciate then how "dire" this observation of the patient was. He said that he assumed that un-reactive pupils a normal observation with a patient with encephalitis.

4.35. He stated that he would have done the observations recorded as having been done at 4.40 am shortly before arrival at Women's and Children's Hospital. He stated that the GCS of 7 recorded there was done at the back of the ambulance on arrival at the Women's and Children's Hospital between himself and Ms Delfino. He noted that it

was different to his initial observation of her GCS in that she had dropped a point for her verbal responses. He stated that he could not recall to whom he gave a handover in relation to Elly but that the staff at the Women's and Children's Hospital were alarmed at Elly's low GCS (T294). He stated that it was the Women's and Children's Hospital's response on receiving Elly that caused him and Ms Delfino to ring their shift manager.

4.36. In cross examination Mr DeLyster was asked what he understood to be required by a direction to perform close neurological observations. He stated that this simply meant monitoring the GCS but did not have any particular view as to how frequently it should be done, or even whether it should be done more than once.

4.37. He stated that on arrival at the Women's and Children's Hospital Ms Delfino was concerned about Elly's condition, but he could not say if it was because of her GCS of 7 or because her eyes were fixed and dilated or both. However, he stated that Ms Delfino definitely reacted and approached the matter with greater haste at that point. He stated that until that point he had not appreciated that there was a matter of concern.

4.38. He stated that to his mind there was no difference in Elly's condition from his first sighting of her at 4:17 am at the Flinders Medical Centre until 4:30 am when the ambulance left the Flinders Medical Centre. He acknowledged that he continued to hold this view despite the fact that the witnesses from the Flinders Medical Centre had made observations which were directly inconsistent with his. He stated that he interpreted the expression "fluctuating" as given by the nurse at the Flinders Medical Centre as being a fluctuation between a GCS of 12 to 15 on the one hand and an 8 on the other hand.

4.39. He had no particular recollection about the adequacy or inadequacy of Elly's handover to him at the Flinders Medical Centre. He could not recall if he thought it was vague. He did not think that he asked for any further information from the doctor in relation to Elly and did not recall telling Ms Delfino that the doctor's handover was vague. He also did not recall Ms Delfino being prompted by his report that the handover had been vague to suggest that he read the Flinders Medical Centre notes before they started the journey to Women's and Children's Hospital.

4.40. Mr DeLyster stated that he would have written the entries under "past history", "history" and "on arrival" en route in the ambulance although he did not have a specific recollection. He did not specifically recall being told what Elly's GCS was at the Flinders Medical Centre apart from being told that it fluctuated. I asked Mr DeLyster if he had any recollection of where the ambulance was when he recorded the GCS observation shown on the patient report form as having been taken at 4:30 am. My distinct impression was that he was reluctant to concede that this observation must have been made at a place that was either within the grounds of Flinders Medical Centre, or very close to the Flinders Medical Centre. Eventually he conceded, after much prevarication, that the observations would have been made early in the journey, and suggested that they may have been made at St Marys. I find this completely unconvincing particularly in view of the fact that earlier in his evidence he had referred to that first entry in the patient report form as showing that at the Flinders Medical Centre Elly's GCS would have been 8. In support of that estimate, he himself made reference to the case card entry against 4:30 am. In my opinion, that observation must have been made in the ambulance either within the grounds of, or very close by, the Flinders Medical Centre.

4.41. It is notable that the material under the headings of past history, history and on arrival on the patient report form were written by Mr DeLyster in the ambulance. I will quote those parts of the form:

> 'Phx + med^{n} – List with pt.
>
> Hx – Pt developed front headache 6/7 ago. Fever and vomiting for 4/7 ago. Pt has since been vague – GCS 12-14. This morning unable to move L/leg – spasm in L arm.
>
> O/A – Pt lying on barouche, doctor & mother in attendance.' (Exhibit C6a)

4.42. He was asked why, if he thought that the patient had a GCS lower than 12 to 14 while at the Flinders Medical Centre, he had not recorded that fact on the patient report form under the heading "history". He could not offer any explanation.

4.43. He agreed that there were many things in relation to which he had only the vaguest of recollections, but paradoxically there were certain things about which he purported to have a good recall. He agreed that, after considering all of the matters on which he had such a vague recollection, he could not now specifically recall that Ms Delfino queried the GCS at Flinders Medical Centre. He acknowledged that several weeks before the Inquest he and Ms Delfino discussed the coming inquest. He and Ms

Delfino discussed her recollections about the GCS being queried. They also discussed their recollection of Elly's condition at Flinders Medical Centre. Ms Delfino said during that discussion that the GCS seemed to be unchanged on the trip from FMC to Women's and Children's Hospital.

4.44. Mr DeLyster maintained that he crossed out the 0430 reference to pupillary size because that observation was done approximately half way along the journey. However, the patient report form records that there was a specific observation at 0440, and another one at 0450. I find it difficult to see, given that the pupillary observations as shown on the patient report form on arrival at Women's and Children's Hospital had three separate observations, including one for 0440, the approximate half way mark of the journey, that Mr DeLyster could credibly suggest that the reason he crossed out the earlier recording for 0430 was because that particular observation was made half way into the journey. The story does not stand up to scrutiny when one considers that on arrival at the Women's and Children's Hospital there was already a specific entry for 0440. Furthermore, Mr DeLyster conceded that while at the Women's and Children's Hospital he altered the 0430 observation for verbal response under the Glasgow Coma Score from 1 to 2 with the result that the GCS total for that time changed from 7 to 8. He said that that change was made at the Women's and Children's Hospital. Yet the change to pupillary size was not made at the Women's and Children's Hospital. Indeed, the hospital copy of the patient report form duly records that the amendment to the GCS from 7 to 8 had been made before that form was handed in at the Women's and Children's Hospital. Therefore it is quite clear that the amendment to the pupillary size on the green and pink copies was made subsequent to the handing in of the white (hospital) copy at the Women's and Children's Hospital.

4.45. Given that Mr De Lyster's explanation for altering the pupillary observation does not bear close scrutiny, I pause to consider what other explanation might exist for having made the alteration. One possible explanation is that Mr DeLyster, having realised at the Women's and Children's Hospital that the situation was much graver than he had apparently thought, decided that it would place him in a better light if the pupillary observation for 4:30 am had not in fact taken place, and had not recorded the pupils being fixed and dilated at that time. This was suggested to Mr DeLyster as the true explanation for his change to the pupillary observation. He denied it (see T346-347).

4.46. Mr DeLyster was asked if he agreed with the recollection of another witness, Ms Nieva, the on-duty triage nurse at the Women's and Children's Hospital who also gave evidence at the Inquest. It was Ms Nieva's evidence that Mr DeLyster did not say anything to her about Elly's GCS, and as he was turning to walk away from her to take Elly to the resuscitation room (Nurse Nieva had already decided that Elly would go to the resuscitation room because of her encephalitis condition) Nurse Neiva asked about Elly's GCS. According to Nurse Nieva, Mr DeLyster paused for a few seconds and then answered "7". She then reacted by saying "What 7?" and when he repeated it he also said that she had been 7 when they had picked her up from the Flinders Medical Centre. It was at that point that Nurse Nieva set in train the events which led to the calling of a 'Code Blue' at the Women's and Children's Hospital and Elly's treatment from that time. Mr DeLyster had no recollection of these events as recalled by Nurse Nieva.

4.47. I pause to note that Nurse Nieva's account of events also differs from that of Ms Delfino. It will be recalled that Ms Delfino gave evidence that she herself volunteered to the nurse at triage that Elly's pupils were size 6 and non-reactive, and it was that information that set in motion the course of events that caused the Women's and Children's Hospital staff to deal with the matter with great urgency. It will also be recalled that Ms Delfino said that she did not pass on any information as to Elly's GCS to the triage nurse.

4.48. In Mr DeLyster's record of interview, Exhibit C15, he states at line 439-441 that he told the Women's and Children's Hospital staff at handover that Elly had a GCS of 7 and that her pupil size was 6 and un-reactive to light. That account differs from Ms Delfino's account in that she stated that, at least she herself did not give a GCS score on arrival at the Women's and Children's Hospital. However, it is not necessarily inconsistent with Nurse Nieva's account, which is that Mr DeLyster did report the GCS to her, but only after she specifically asked for it. I note that Ms Delfino's record of interview, Exhibit C14, at line 631-634 records that Mr DeLyster did a "really quick handover" and Ms Delfino was not sure if he had referred the triage nurse to the pupillary size and so it was Ms Delfino who did that.

4.49. It may be that Mr DeLyster did a very quick handover to Nurse Nieva, Nurse Nieva had to prompt Mr DeLyster as to the GCS score which he then gave, and Nurse Nieva was then reacting to the news of such a low GCS score by setting appropriate wheels

4.50. in motion and did not hear or notice that Ms Delfino was providing her with further information as to pupillary size. That sequence of events provides a satisfactory reconciliation of the three accounts.

4.51. It is also clear from the records of interview of Mr DeLyster and Ms Delfino that they carried out a final examination of Elly at the rear of the ambulance on arrival at the Women's and Children's Hospital. The Women's and Children's Hospital notes show that Elly's time of arrival at the triage desk was approximately 5:01 am. Yet the ambulance service record shows the ambulance arriving at the Women's and Children's Hospital at 4:51 am. Nurse Nieva gave evidence that it would have been possible for the ambulance to have been parked outside unobserved for some little time before the paramedics brought Elly in. In my opinion, the ambulance officer took several minutes at least in their examination of Elly at the rear of the ambulance. In this regard I note that at lines 575-578 of Ms Delfino's record of interview, Exhibit C14, she states:

> 'And as we took her out, I did a very quick one like a (sic) external, like I did at the hospital just to make sure in my head she had not deteriorated as well and then my – from my knowledge she hadn't at all.'

4.52. This evidence supports the inference that there was some period at the rear of the ambulance on arrival at the Women's and Children's Hospital during which Mr DeLyster and Ms Delfino were examining Elly before taking her in. In my view the triage record is correct, and it probably was closer to 5:01 am than 4:51 am when Elly was brought into the triage desk.

4.53. It is also apparent from Ms Delfino's record of interview (Exhibit C14) at line 627-630 that she did not become aware of the fact that Elly's pupils were size 6 and non-reactive until arrival at the Women's and Children's Hospital. I think it likely that when Ms Delfino appreciated that fact, she carried out a further examination of Elly at the rear of the ambulance prior to entering the Women's and Children's Hospital. I consider that at that point Ms Delfino became alarmed because she realised that Elly's condition at that point was extremely serious.

5. Discussion of evidence of Mr DeLyster and Ms Delfino

5.1. I have reached the conclusion that Mr DeLyster was an unsatisfactory witness. Where his evidence differs from that of the witnesses Topsfield and Agzarian, I unhesitatingly accept the latter two witnesses.

5.2. Ms Delfino was a better witness than Mr DeLyster. However, her version of events at the Flinders Medical Centre is squarely at odds with the version of the witnesses Dr Topsfield and Nurse Agzarian. I am in a position where it is simply not possible to reconcile the two different versions of events. Dr Topsfield and Nurse Agzarian gave accounts which were appropriately consistent the one with the other. I conclude that I accept the evidence of Dr Topsfield and Nurse Agzarian in preference to that of Ms Delfino.

5.3. I believe that Ms Delfino and Mr DeLyster realised the seriousness of the situation when they arrived at the Women's and Children's Hospital. For Ms Delfino that realisation came when she realised that Elly's pupils were fixed and dilated at size 6. Mr DeLyster did not seem to appreciate the significance of this fact even then. I believe that it was then in Ms Delfino's interests to maintain the position that Elly's condition had not in fact changed from the time she was at the Flinders Medical Centre until her time of arrival at the Women's and Children's Hospital. Accordingly, she made up her account of the querying of the GCS at Flinders Medical Centre and the conversation about the GCS fluctuating and it being normal for Elly, and the conversation about Dr Topsfield being happy for Elly to be transferred in "this condition". It should be noted that Ms Delfino's account and Mr De Lyster's account are not consistent with one another. Mr DeLyster has Elly with eyes fixed and dilated and open at all times while at the Flinders Medical Centre, and unresponsive. Ms Delfino has her with eyes closed, and unresponsive. This is a major difference of recollection. On the other hand, Nurse Agzarian and Dr Topsfield and Dr Farmer all provide similar accounts of Elly's state.

5.4. I believe that the most likely explanation is that Elly suffered a catastrophic "coning" of her brain shortly after she was loaded into the ambulance, and en route to the Women's and Children's Hospital. I believe that this event took place before Mr DeLyster made his first set of GCS observations which he recorded as having occurred at 4:30 am. I believe also that his pupillary observation which was subsequently crossed out on the green and pink versions of the form was indeed made at 4:30 am, shortly after the ambulance left the Flinders Medical Centre. He noted her

pupillary size to be 6 and un-reactive. He failed to appreciate the significance of this and failed to convey it to Ms Delfino. There may have been an opportunity for the ambulance to be turned around and Elly quickly readmitted to Flinders Medical Centre at that point. I do not know whether that would have changed the outcome, but in any event it did not happen. Elly was transported to the Women's and Children's Hospital and did not start to receive treatment for the "coning" until perhaps some 40 to 45 minutes after it had occurred.

5.5. In my opinion, Ms Delfino and Mr DeLyster arrived at matching accounts some time shortly after leaving the Women's and Children's Hospital and before advising their supervisor Ms Wilton. At or about this time Mr DeLyster appreciated the significance of the fact that his 0430 observations recorded the pupillary size of 6 and un-reactive. He decided to cross out that reference in the two remaining copies of the record that he retained at that time, and to invent an account of that pupillary observation having been made at a time when the ambulance was roughly half way between the two hospitals. The purpose of this invention was to remove any possibility of a suggestion that, had Mr DeLyster appreciated the significance of the observation at an earlier time, he may have been in a position to influence the events by requesting that the ambulance be returned immediately to Flinders Medical Centre.

6. Dr Klug

6.1. Dr Geoffrey Klug gave evidence at the Inquest, having been requested to provide a report for the State Coroner. He is a practising Neurosurgeon and has a particular interest in Paediatric Neurosurgery. He has worked at the Royal Children's Hospital in Melbourne and has also had appointments at the Royal Melbourne Hospital and the Royal Alfred Hospital. As I have stated he prepared a report for the assistance of the court which was admitted as Exhibit C.20 in these proceedings.

6.2. As I have already noted, Dr Klug endorsed the approach taken by Dr Topsfield at the Flinders Medical Centre in the care and management of Elly. Dr Klug made it quite clear that it is not possible to reconcile the different assessments of Elly's GCS by the Ambulance Officers on the one hand and the Flinders Medical Centre clinicians on the other as mere disagreements in assessment. He acknowledged that it is possible to have transient fluctuations in GCS observations. However, I do not believe that the difference in the accounts can be attributed to some transient fluctuations. The

versions of the Ambulance Officers on the one hand and the Flinders Medical Centre clinicians on the other make it quite apparent that the differences as observed were not transient fluctuations. One or other of the Ambulance Officers was with Elly for fifteen minutes before they left the Flinders Medical Centre, more than sufficient time for an assessment to be made as to whether her condition was stable or transient.

6.3. Dr Klug expressed the view that on the assumption that Elly's GCS on leaving the Flinders Medical Centre was between 13 and 15, and it had been steady at that level for some hours, it was not necessary to intubate and ventilate Elly because the ambulance trip would only be of a short duration. However, he was of the view that if the GCS had been deteriorating, and particularly if it had been as low as 7, then Elly should not have been transported unless intubated and ventilated. In my opinion, the evidence strongly supports the conclusion that Elly's GCS immediately before transfer was between 13 and 15 as stated by Dr Topsfield. I do not take Dr Klug to be suggesting in those circumstances that it was necessary that she should be intubated and ventilated prior to transfer.

6.4. Dr Klug did suggest that intubation and ventilation and hyperventilation are methods of reducing raised cranial pressure for short periods and could be used to "buy time" in an emergency situation. However, the urgent need for surgery, and the definitive diagnosis, was not established until the CT scan had been completed at 3.30 am. The ambulance arrived at 4.15 am. To intubate and ventilate Elly in that period of 45 minutes would probably not have been possible given the need to arrange for the attendance of an anaesthetist at the Flinders Medical Centre for that purpose. It is arguable that Elly could have been intubated and ventilated without anaesthetic drugs in an emergency setting. However, this would have been particularly distressing and I make no criticism of the staff at the Flinders Medical Centre for not having pursued this option. I consider that had the course of intubation and ventilation been pursued, any reasonable practitioner would have attempted to carry it out under anaesthetic. This would have inevitably delayed Elly's transfer to the Women's and Children's Hospital, and in view of the fact that her GCS had remained steady throughout her time at the Flinders Medical Centre, it was reasonable to proceed with her transfer as rapidly as possible without the delay that the attendance of an anaesthetist would have required.

6.5. Dr Klug expressed the opinion that Elly's sudden and catastrophic deterioration most likely occurred when she was being transferred by ambulance to the Women's and Children's Hospital.

6.6. Dr Klug made the comment that it was unfortunate that Elly was not taken to the Women's and Children's Hospital which had readily available neurosurgical facilities for children.

6.7. He expressed the view that if in the opinion of the treating practitioner there could be a disorder which may require neurosurgery it would be best for the child to transferred to the Women's and Children's Hospital at the outset.

7. Conclusions

7.1. For the reasons I have already stated I prefer the evidence of the Flinders Medical Centre clinicians to that of the Ambulance Officers. I consider that Elly's GCS was between 13 and 15 at all times during her stay at the Flinders Medical Centre. She experienced a catastrophic deterioration very soon after being loaded into the ambulance. Ambulance Officer De Lyster failed to appreciate the significance of her condition, or even that there had be any change in it. He only realised that things had changed when he observed Ambulance Officer Delfino's reaction when Elly was unloaded at the Women's and Children's Hospital. Needless to say it is extremely concerning that Mr De Lyster did not appreciate the significance of Elly's symptoms. I have made criticisms of his evidence in the body of these findings which do not reflect at all well on Mr De Lyster. It is unlikely that, even if Mr De Lyster had appreciated the significance of Elly's deterioration at an earlier point in the journey, her outcome would have been different. However, that is speculation.

7.2. I do not think that the Flinders Medical Centre clinicians should be subject to any criticism for not having intubated and ventilated Elly before her transfer. In the circumstances I consider that this was a correct and reasonable judgement.

7.3. The evidence at the Inquest shows that ambulance personnel assumed that medical staff in the hospital system know and understand ambulance transfer categorisations. It is clear that doctors Topsfield and Farmer did not have any clear appreciation of this. This case highlights the need for the Ambulance Service and the hospital system to make every effort to ensure that all concerned in medical transfers understand the

system employed by the Ambulance Service. This is an area which requires constant monitoring and continuous improvement. However, I refrain from making any specific recommendation on this occasion.

7.4. I recommend pursuant to Section 25(2) of the Coroner's Act 2003 that the Department of Health give consideration to the development of a policy under which practitioners at hospitals such as the Noarlunga Health Service should if they have any doubt as to whether a paediatric patient may require neurosurgery, give serious consideration to sending the patient direct to the Women's and Children's Hospital in the first instance rather than to the Flinders Medical Centre.

Key Words: Ambulance Service; Emergency Departments; Hospital treatment;Glasgow Coma Scale, Ambulance Categorisation

In witness whereof the said Coroner has hereunto set and subscribed his hand and

Seal the 25th day of September, 2006.

State Coroner